Shore Protection Project Performance Improvement Initiative (S3P2I)

Economics Work Unit Methodology

Planning Community of Practice Conference

May 9-11, 2006

San Francisco, CA

Presented by:
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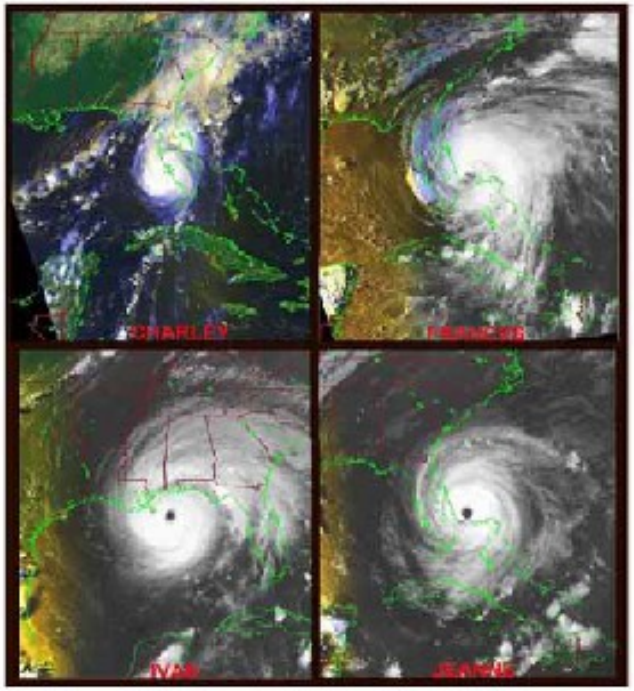
Economics & Social Effects Work Unit Economic Advisor

SHORE PROTECTION ASSESSMENT

US Army Corps of Engineers

2004 Florida Hurricane Season

CHARLEY – Cat 4
Aug 14 – Lee County



FRANCES – Cat 2
Sept 5 – Martin County

IVAN – Cat 3
Sept 15 – Gulf Shores, AL

JEANNE – Cat 3
Sept 26 – Martin County

Authority

Military Construction Appropriations and Emergency Supplemental Emergency Hurricane Supplemental Appropriations Act 2005
(PL 108-324, OCT. 13, 2004)

For an additional amount for "Construction, General" for emergency expenses for repair of storm damage for authorized shore protection projects and assessment of project performance of such projects, $62,600,000, to remain available until expended…

S3P2I Funding-Level: $11M
S3P2I Duration: FY05-FY07

Focus of Studies

- This is the first comprehensive post storm engineering, economic, social, and environmental analysis performed for a Federal storm damage reduction project.

- In general, monies have simply not been available to document the value of these Federal shore protection projects to the nation.

- The early initiative of economic studies is to analyze the economic value of Federal shore protection projects by performing post storm analyses and to report the findings to Congress, the Administration, and the general public.

Program Structure

PgRT/ Oversight Committee

Lillian Almodovar, IWR

Jan Rasgus, HQUSACE, Policy

Joan Pope, HQUSACE, ERDC

Charles Chesnutt, IWR

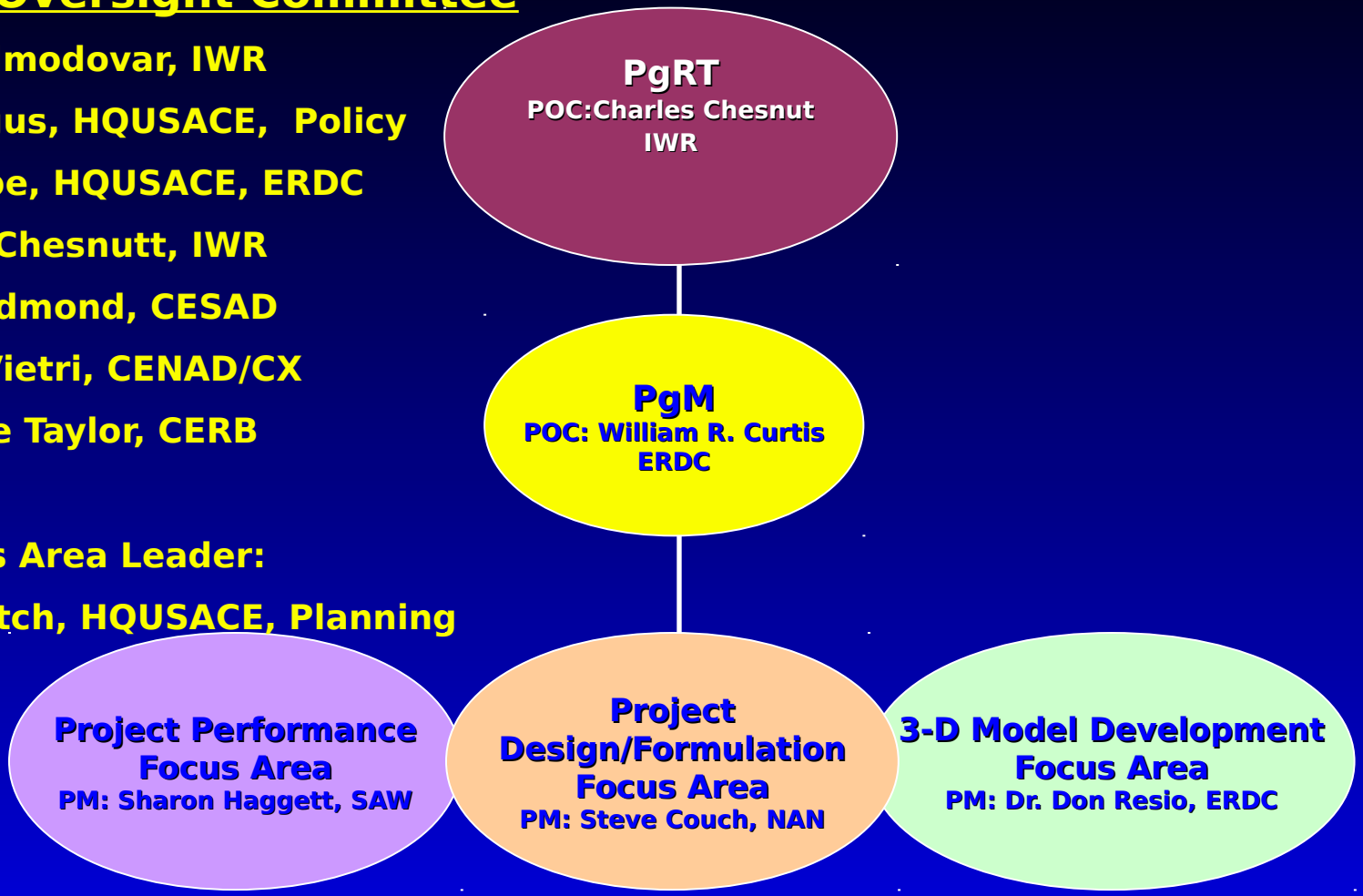
Kaiser Edmond, CESAD

Joseph Vietri, CENAD/CX

Dr. Bruce Taylor, CERB

Business Area Leader:

Harry Kitch, HQUSACE, Planning



Performance Assessment Focus Area Structure

Project Performance Focus Area
PM: Sharon Haggett
CESAW-PM-C

Focus Area Work Units

Economic & Social Effects
Advisor: H. Shoudy
(Contractor)

Physical Performance
PI: M. Gravens
CEERDC-CHL-MS

Storm Characterization
PI: J. Hanson
CEERCD-HF-FO

Environmental Consideration
PI: S. Ashby
CEERDC-EP-P

Watershed Analysis
PI: P.Grace
CESAM-OP-CO

Economics Methodology

- The methodology developed is extremely important in appropriately measuring damages and impacts avoided during hurricanes in the Federal project areas analyzed.

- Due to the importance of the task and the uniqueness of the analytical approach, the methodology will be peer reviewed in the future by academic and technical experts to assist in identifying an appropriate procedure for this and future post storm analyses.

- Prior to peer review, there is the opportunity to discuss the draft methodology within the Corps.

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WU
Economic Workgroup Methodology

- Develop Storm Characteristics for Storms since Authorizing Document
- Run S-Beach by Storm and Adjust Pre-project Shoreline
- Estimate Without Project Pre-storm Shoreline Position (Condition)
  - Use Pre and Post-storm Lidar to Assist
  - Apply Economic Rationality in Without Project
  - Use Empirical Data from Similar Areas
- Run S-Beach for Hurricane(s) on Without Project Condition
- Estimate Without Project Post-storm Shoreline Position
- Evaluate Pre and Post-storm With Project Condition
- Collect Economic Benefit Data to include Structural Inventory
- Produce Damage Relationship Curves
- Estimate With Project Damages
- Estimate Without Project Damages

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Work Unit Accomplishments

- **Most of our focus to date has been on getting an estimate of damages prevented for Martin County, FL.**
- **Another major task has been the data collection and analysis necessary to support new or revised damage relationship curves for residential and commercial coastal properties**

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Produce Residential Damage versus Erosion/Wave/Inundation Relationships

Completed Items:

- Field inspections of damaged properties from Isabel, Ivan, and Dennis were done to identify structural damages by damage element (wind, waves, flooding, and erosion).

- The previous OMB-approved economic survey questionnaire for shore protection was revised and OMB approval was attained.

- All properties have been photographed and located on real estate parcels with GIS

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Produce Residential Damage versus Erosion/Wave/Inundation Relationships

Completed Items:

- Names and addresses of owners have been obtained for survey mailing purposes.
- Letters have been prepared to alert property owners of questionnaires they will be receiving, to transmit the questionnaire, and to follow-up for non-respondents.
- Field inspection data has been put in Excel spreadsheets for ease in analysis.

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Collect Economic Benefit Data
(focus of most of the economic work to date)

Completed items:

- **Visit project area and meet with project sponsor representative to discuss particulars of project from sponsor's perspective.**

- **Discuss with sponsor representative the availability of economic data necessary to evaluate the project.**

- **Visit project area Corps District office to meet with designated district liaison and identify district staff to assist in the collection and transfer of data.**

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Collect Economic Benefit Data

Completed items:

- **Collect data and provide oversight of collection process.**
  1. **Inventory of structures.**
  2. **Economic Data Collection- 1st floor elevation, structure types, construction material, estimate depreciated replacement values, lot characteristics, ancillary features (additional structures, septic system, etc.).**
- **Coordination is occurring with Beach Fx team to populate the model with necessary economic data inputs.**

Key Takeaway Points

- First comprehensive post storm project performance analysis
- Unique methodology including development of a without project condition for a completed project
- Results could influence future Congressional funding for Federal shore protection projects
- Congress has provided significant funding, therefore, it is imperative that the Corps provide a comprehensive and professional analysis

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QUESTIONS???